

**IN THE CLAIMS:**

Although no amendments have been made to the claims, the claims in their presently pending state are presented for the Examiner's convenience.

1. (Original) A method of adding primitives in real time to a model to produce a non-photorealistic rendering (NPR) of the model, comprising:  
storing attribute data for each one of the primitives;  
providing a ring buffer, having at least one stage, for each vertex of the model which is to have a primitive, wherein  
within each ring buffer, data is stored representative of a direction of each one of the primitives; and  
retrieving information from the ring buffer by using a pointer, wherein the pointer is incremented and iterated over each stage of the ring buffer.
2. (Original) The method of claim 1, wherein the data stored in the ring buffer for each vertex includes information concerning the change in position of each vertex from frame to frame.
3. (Original) The method of claim 1, wherein a program selects vertices from the model to which to attach the primitives.
4. (Original) The method of claim 1, wherein the attribute information includes at least one of: a width, a color, a starting vertex position, and a visibility flag for each primitive.
5. (Original) The method of claim 1, wherein each ring buffer for each vertex has a set length.
6. (Original) The method of claim 1, wherein the attribute information is

stored within the ring buffer for each vertex.

7. (Original) The method of claim 1, wherein the model is a 3-dimensional model.

8. (Original) The method of claim 1, wherein the primitives are at least one of polygons and motion line segments.

9. (Original) A real-time primitive drawing system, comprising:  
a storage device for storing attribute data for at least one primitive to be added to a model;

a ring buffer, having at least one stage, for each vertex of the model to which to attach a primitive, wherein

within each ring buffer, data is stored representative of a direction of each one of the primitives; and wherein

a pointer is used to retrieve information from the ring buffer, wherein the pointer is incremented and iterated over each stage of the ring buffer.

10. (Original) The system of claim 9, wherein the data stored in the ring buffer for each vertex includes information concerning the change in position of each vertex from frame to frame.

11. (Original) The system of claim 9, wherein a program selects vertices from the model to which to attach each primitive.

12. (Original) The system of claim 9, wherein the attribute information includes at least one of: a width, a color, a starting vertex position, and a visibility flag for each primitive.

13. (Original) The system of claim 9, wherein each ring buffer for each

vertex has a set length.

14. (Original) The system of claim 9, wherein the attribute information is stored within the ring buffer for each vertex.

15. (Original) The system of claim 9, wherein the model is a 3-dimensional model.

16. (Original) The system of claim 9, wherein the primitives are at least one of polygons and motion line segments.

17. (previously presented) A computer-readable medium having encoded thereon a computer-readable program code which when executed causes a computer to:

store attribute data for at least one motion line to be added to a model;

read from and write to a ring buffer, having at least one stage, for each vertex of the model to which to attach a primitive,

wherein within each ring buffer, data is stored representative of a direction of each one of the primitives; and

use a pointer to retrieve information from the ring buffer, wherein the pointer is incremented and iterated over all segments of the ring buffer.

18. (previously presented) The computer-readable medium of claim 17, wherein the data stored in the ring buffer for each vertex includes information concerning the change in position of each vertex from frame to frame.

19. (previously presented) The computer-readable medium of claim 17, wherein the computer-readable program code when executed further causes the computer to select vertices from the model to which to attach the motion lines.

20. (previously presented) The computer-readable medium of claim 17, wherein each ring buffer for each vertex has a set length.

21. (previously presented) The computer-readable medium of claim 17, wherein the attribute information is stored within the ring buffer for each vertex.

22. (previously presented) The computer-readable medium of claim 17, wherein the model is a 3-dimensional model.

23. (previously presented) The computer-readable medium of claim 17, wherein the primitives are at least one of polygons and motion line segments.

24. (Original) An apparatus for adding primitives in real time to a model, comprising:

a storage device for storing attribute data for at least one primitive to be added to a model;

a ring buffer, having at least one stage, for each vertex of the model to which to attach a primitive, wherein

within each ring buffer, data is stored including a direction of each one of the primitives; and

a pointer for retrieving information from the ring buffer, wherein the pointer is incremented and iterated over each stage of the ring buffer, an apparatus on which the resultant primitives are rendered and displayed.

25. (Original) The apparatus of claim 24, wherein the data stored in the ring buffer for each vertex includes information concerning the change in position of each vertex from frame to frame.

26. (Original) The apparatus of claim 24, wherein a program selects

vertices from the model to which to attach the primitives.

27. (Original) The apparatus of claim 24, wherein each ring buffer for each vertex has a set length.

28. (Original) The apparatus of claim 24, wherein the attribute information is stored within the ring buffer for each vertex.

29. (Original) The apparatus of claim 24, wherein the model is a 3-dimensional model.

30. (Original) The apparatus of claim 24, wherein the primitives are at least one of polygons and motion line segments.

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**IN THE CLAIMS:**

Please amend claims 17-23 as follows:

1. (Original) A method of adding primitives in real time to a model to produce a non-photorealistic rendering (NPR) of the model, comprising:  
storing attribute data for each one of the primitives;  
providing a ring buffer, having at least one stage, for each vertex of the model which is to have a primitive, wherein  
within each ring buffer, data is stored representative of a direction of each one of the primitives; and  
retrieving information from the ring buffer by using a pointer, wherein the pointer is incremented and iterated over each stage of the ring buffer.
2. (Original) The method of claim 1, wherein the data stored in the ring buffer for each vertex includes information concerning the change in position of each vertex from frame to frame.
3. (Original) The method of claim 1, wherein a program selects vertices from the model to which to attach the primitives.
4. (Original) The method of claim 1, wherein the attribute information includes at least one of: a width, a color, a starting vertex position, and a visibility flag for each primitive.
5. (Original) The method of claim 1, wherein each ring buffer for each vertex has a set length.
6. (Original) The method of claim 1, wherein the attribute information is stored within the ring buffer for each vertex.

7. (Original) The method of claim 1, wherein the model is a 3-dimensional model.
8. (Original) The method of claim 1, wherein the primitives are at least one of polygons and motion line segments.
9. (Original) A real-time primitive drawing system, comprising:  
a storage device for storing attribute data for at least one primitive to be added to a model;  
a ring buffer, having at least one stage, for each vertex of the model to which to attach a primitive, wherein  
within each ring buffer, data is stored representative of a direction of each one of the primitives; and wherein  
a pointer is used to retrieve information from the ring buffer, wherein the pointer is incremented and iterated over each stage of the ring buffer.
10. (Original) The system of claim 9, wherein the data stored in the ring buffer for each vertex includes information concerning the change in position of each vertex from frame to frame.
11. (Original) The system of claim 9, wherein a program selects vertices from the model to which to attach each primitive.
12. (Original) The system of claim 9, wherein the attribute information includes at least one of: a width, a color, a starting vertex position, and a visibility flag for each primitive.
13. (Original) The system of claim 9, wherein each ring buffer for each vertex has a set length.

14. (Original) The system of claim 9, wherein the attribute information is stored within the ring buffer for each vertex.
15. (Original) The system of claim 9, wherein the model is a 3-dimensional model.
16. (Original) The system of claim 9, wherein the primitives are at least one of polygons and motion line segments.
17. (Current amended) ~~A real-time primitive drawing program, comprising:~~  
a computer-readable medium ; having encoded thereon ~~and~~ a computer-readable program code ; which when executed causes a computer stored on the computer-readable medium, having instructions to:  
store attribute data for at least one motion line to be added to a model;  
read from and write to a ring buffer, having at least one stage, for each vertex of the model to which to attach a primitive,  
wherein within each ring buffer, data is stored representative of a direction of each one of the primitives; and  
use a pointer to retrieve information from the ring buffer, wherein the pointer is incremented and iterated over all segments of the ring buffer.
18. (Currently amended) The ~~real-time primitive drawing program~~ computer-readable medium of claim 17, wherein the data stored in the ring buffer for each vertex includes information concerning the change in position of each vertex from frame to frame.
19. (Currently amended) The ~~real-time primitive drawing program~~ computer-readable medium of claim 17, wherein the computer-readable program code when



executed further causes the computer to wherein a program selects select vertices from the model to which to attach the motion lines.

20. (Currently amended) The ~~real-time-primitive-drawing-program~~ computer-readable medium of claim 17, wherein each ring buffer for each vertex has a set length.

21. (Currently amended) The ~~real-time-primitive-drawing-program~~ computer-readable medium of claim 17, wherein the attribute information is stored within the ring buffer for each vertex.

22. (Currently amended) The ~~real-time-primitive-drawing-program~~ computer-readable medium of claim 17, wherein the model is a 3-dimensional model.

23. (Currently amended) The ~~real-time-primitive-drawing-program~~ computer-readable medium of claim 17, wherein the primitives are at least one of polygons and motion line segments.

24. (Original) An apparatus for adding primitives in real time to a model, comprising:

a storage device for storing attribute data for at least one primitive to be added to a model;

a ring buffer, having at least one stage, for each vertex of the model to which to attach a primitive, wherein

within each ring buffer, data is stored including a direction of each one of the primitives; and

a pointer for retrieving information from the ring buffer, wherein the pointer is incremented and iterated over each stage of the ring buffer,

an apparatus on which the resultant primitives are rendered and displayed.

25. (Original) The apparatus of claim 24, wherein the data stored in the ring buffer for each vertex includes information concerning the change in position of each vertex from frame to frame.

26. (Original) The apparatus of claim 24, wherein a program selects vertices from the model to which to attach the primitives.

27. (Original) The apparatus of claim 24, wherein each ring buffer for each vertex has a set length.

28. (Original) The apparatus of claim 24, wherein the attribute information is stored within the ring buffer for each vertex.

29. (Original) The apparatus of claim 24, wherein the model is a 3-dimensional model.

30. (Original) The apparatus of claim 24, wherein the primitives are at least one of polygons and motion line segments.

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